

REMARKS/ARGUMENTS

Claims 1, 2, 3, 6, 7, 9, 10, 13, 18, 19, 20, 22, 23, 24, 25, and 27 remain in this application. Claims 4, 5, 8, 11, 12, 14, 15, 16, 17, 21, 26, 28, 29, and 30 have been canceled, either in this Amendment or in previous Amendments.

A request for a one month extension of time to extend the period for response to the Office Action to November 12, 2003 and an authorization for withdrawing the payment from a deposit account is attached hereto. The period for extension receives an additional day beyond November 11, 2003, because the latter date is Veteran's Day, a designated Federal holiday. If a one-month extension and/or the payment authorized is not sufficient, or the request and/or authorization for payment is missing, the Commissioner is hereby authorized to consider this a request for the necessary extension of time, and to charge Deposit Account No. 01-2384 the necessary amount for entry of this Amendment.

Claim 1 has been amended. Support for "a pressure-based fingerprint sensor configured to sense a pattern of ridges and valleys of a fingerprint as surface pressure distribution by scanning a plurality of scanning electrode lines arranged in an x-direction and a plurality of scanning electrode lines arranged in a y-direction with an active element connected to said x and y scanning electrode lines at each intersection thereof" will be found at page 7, line 3 to page 9, line 12. (Sections of the specification recited here and elsewhere in explaining support for claim amendments are intended by way of example and are not intended to imply that support will not be found elsewhere.) Support for "said flat information recording/processing device configured to offer fingerprint data from said thin fingerprint sensor and data from said memory to said portable read/write device" will be found at page 11, lines 4-7.

Claims 2 and 3 have been amended. Support for "a pressure-based fingerprint sensor configured to sense a pattern of ridges and valleys of a fingerprint as surface pressure distribution by scanning a plurality of scanning electrode lines arranged in an x-direction and a

plurality of scanning electrode lines arranged in a y-direction with an active element connected to said x and y scanning electrode lines at each intersection thereof" in both Claims will be found at page 7, line 3 to page 9, line 12.

Claim 6 has been amended to recite a "system." The phrase "configured for connecting with an information processing unit" at the end of the second paragraph of Claim 6 has been canceled as unnecessary in view of the statement at the beginning of the third paragraph of Claim 6. Support for a "pressure-based fingerprint sensor configured to sense a pattern of ridges and valleys of a fingerprint as surface pressure distribution by scanning a plurality of scanning electrode lines arranged in an x-direction and a plurality of scanning electrode lines arranged in a y-direction with an active element connected to said x and y scanning electrode lines at each intersection thereof" will be found at page 7, line 3 to page 9, line 12.

Claim 7 has been amended to recite a "system," consistent with the recitations of Claim 6.

Claim 9 has been amended. Support for "fingerprint data stored in a memory associated with updateable user-specific information corresponding to fingerprints" will be found at page 9, lines 15 to 23 and at page 11, lines 14 to 17. Support for "wherein said user specific information comprises personal characteristics of users, and said control mechanism is configured to utilize said personal characteristics of users rather than individually set conditions of use to control operation of the machine/system control device" will be found at page 19, line 21 to page 20, line 6. See also page 16, line 15 to page 17, line 7.

Claim 10 has been amended. Support for "wherein said user specific information comprises personal characteristics of users, and said control mechanism is configured to utilize said personal characteristics of users rather than individually set conditions of use to control operation of the machine/system control device" will be found at page 19, line 21 to page 20, line 6. See also page 16, line 15 to page 17, line 7.

Claim 19 has been amended in a manner similar to Claims 2 and 3. The amended language of Claim 19 is supported by the same section of the specification cited above as support for the amendments to Claims 2 and 3.

Claim 20 has been amended to replace the term "control device" with the term "portable read/write device," as recited at page 6, lines 17-18 and in many other places in the specification. Support for "as determined by a fingerprint matching unit in the portable read/write device" and for "comparing, in the portable read/write device, the obtained fingerprint" will be found at Figure 3, and at page 10, lines 5-7, page 10, lines 17-18, and page 12, lines 7-8.

Claim 25 has been amended. Support for limiting a speed of a vehicle in accordance with data "of driver specific information, which can be updated and" stored and of "wherein said limiting is in accordance with personal characteristics of users rather than individually set conditions of use," will be found at page 16, line 15 to page 17, line 7, and at page 11, lines 14-17.

Claim 27 has been amended in a manner similar to that of Claims 2 and 3. Support for the amended language will be found in the same section of the specification cited in support of the amendment to Claims 2 and 3.

The rejection of Claims 9, 10, 18, and 19 under 35 U.S.C. 112, first paragraph, as failing to apply with the written description requirement, is respectfully traversed.

Claim 9, as amended, is fully supported in the specification, as indicated above. Moreover, Claim 9 as amended is directed to a configuration similar to that to which Claim 9 as originally presented was directed. Claim 10 as amended is also fully supported in the specification, as indicated above, and is directed to a configuration similar to that to which Claim 10 as originally presented was directed. For this reason, it is submitted that the rejection of Claims 9 and 10, as herein amended, under section 112, first paragraph, no longer applies and should be withdrawn.

Claims 18 and 19 are both directly dependent upon Claim 9. When the recitations of Claims 18 and 19 are considered in conjunction with the recitations of Claim 9, it is submitted that the rejection of Claims 18 and 19 are also no longer applies and should be withdrawn.

For the above reasons, it is requested that the rejection of Claims 9, 10, 18, 19 under 35 U.S.C. 112, first paragraph, be withdrawn.

The rejection of Claims 1-3, 13-16, 27, and 28 under 35 U.S.C. 102(b) as being anticipated by Löfberg is respectfully traversed.

Löfberg discloses a data carrier shaped as a credit card. The data carrier comprises a sensor device for obtaining fingerprint information of the user, reading means and signal processing device, a block that includes a switching means for establishing a signal path to enable an exchange of data between the data carrier and a terminal equipment. The Office asserted that Löfberg implies that block 7 has an exposed electrical terminal, and that the data carrier further comprises a memory for storing fingerprint data and a comparator for comparing newly detected fingerprint data with registered fingerprint data stored in the memory and to output a signal indicative of a match to the exposed terminal.

However, Löfberg does not show or suggest "a pressure-based fingerprint sensor configured to sense a pattern of ridges and valleys of a fingerprint as surface pressure distribution by scanning a plurality of scanning electrode lines arranged in an x-direction and a plurality of scanning electrode lines arranged in a y-direction with an active element connected to said x and y scanning electrode lines at each intersection thereof." This type of scanning, which Löfberg does not teach or suggest, is known as an "active matrix type" scanning, which is characterized by an active element such as a thin film transistor (TFT) as described on page 7, lines 7-19 of the specification. By contrast, scanning of electrode lines arranged in a matrix manner with no active element arranged at each intersection of two intersecting electrode lines is called a "passive matrix type" scanning.

It is not clear how Löfberg detects a fingerprint, but only passive matrix type scanning is assumed. Applying the passive matrix type scanning to detection of a fingerprint in Löfberg, a fingerprint pattern cannot be sensed due to signal crosstalk.

By contrast, Applicant's Claim 1, as herein amended, recites "a pressure-based fingerprint sensor configured to sense a pattern of ridges and valleys of a fingerprint as surface pressure distribution by scanning a plurality of scanning electrode lines arranged in an x-direction and a plurality of scanning electrode lines arranged in a y-direction with an active element connected to said x and y scanning electrode lines at each intersection thereof." Support for this feature is as noted in the explanation of the claim amendments above. Therefore, it is respectfully submitted that Claim 1 is patentable over Löfberg.

Claim 13 depends directly upon Claim 1. When the recitations of Claim 13 are considered in conjunction with those of Claim 1, it is respectfully submitted that Claim 13 is also patentable over Löfberg.

Applicant's Claims 2, 3, and 27 as herein amended, also recite a feature similar to that discussed above with respect to Claim 1. Therefore, it is respectfully submitted that Claims 2, 3 and 27 are also patentable over Löfberg for reasons substantially similar to that given above with respect to Claim 1.

Claims 14-16 and 28 have been canceled, so this rejection no longer applies and should be withdrawn with respect to Claims 14-16 and 28.

For the above reasons, it is respectfully requested that the section 102 rejection of Claims 1-3, 13-16, 27, and 28 over Löfberg be withdrawn.

The rejection of Claims 1-3, 15, 16, and 27 as being anticipated by Hiramatsu is respectfully traversed.

Hiramatsu is directed to a pressure sensor for inputting finger characteristic data and an authenticity sensor for detecting whether a finger is authentic. The pressure sensor and the authenticity sensor are arranged on the surface of an IC card. See Abstract, also Figure 3 and col. 2, lines 27-62. The Office asserts that the IC card comprises a pressure sensor or fingerprint sensor, an A/D converted for converting fingerprint data into digital signals, an external connection contact, and a dictionary memory for storing fingerprint data sensed by the pressure sensor as registered fingerprint data. The Office also asserted that an ATM terminal receiving the IC card executes normal operation commands if the card is authenticated by matching finger characteristics stored in an image memory and the dictionary memory, thus implying that the IC card must transmit a signal to the ATM machine indicating whether there is a match or not via external connection contact 11.

Notably, Hiramatsu teaches the use of "finger pressure data" and "finger characteristic data," which could concern the shape or side of a finger, for example, and is not necessarily nor intrinsically fingerprint data. Therefore, pressure sensor 1 of Hiramatsu is not necessarily or inherently a fingerprint sensor.

By contrast, Applicant's Claim 1 recites, "a pressure-based fingerprint sensor configured to sense a pattern of ridges and valleys of a fingerprint as surface pressure distribution by scanning a plurality of scanning electrode lines arranged in an x-direction and a plurality of scanning electrode lines arranged in a y-direction with an active element connected to said x and y scanning electrode lines at each intersection thereof." This fingerprint sensor, unlike any intrinsically taught or suggested by Hiramatsu, detects a fingerprint pattern comprised of ridges and valleys, as would be clearly understood to one of ordinary skill in the art from the description at page 8, line 19 to page 9, line 12 of the specification. In association with this, a technical term of art, "minutiae data of the fingerprint" is used in the specification at, for example, page 9, lines 9, 17-18, and 19-20.

For the above reasons, it is respectfully submitted that Claim 1 is patentable over Hiramatsu.

Applicant's Claims 2, 3, and 27 as herein amended, also recite a feature similar to that discussed above with respect to Claim 1. Therefore, it is respectfully submitted that Claims 2, 3 and 27 are also patentable over Hiramatsu for reasons substantially similar to that given above with respect to Claim 1.

Claims 15 and 16 have been canceled, so this rejection no longer applies and should be withdrawn with respect to Claims 15 and 16.

For the above reasons, it is requested that the rejection of Claims 1-3, 15, 16, and 27 as being anticipated by Hiramatsu be withdrawn.

The rejection of Claims 9, 10, 18 and 19 as being anticipated by Dunn et al. is respectfully traversed.

Dunn et al. discloses a transducer provided with an integral smart card reader. The transducer is a biometric information input device. See abstract. A biometric input device 20 comprising a contact imaging device 21 is shown in Figure 2. Contact imaging device 21 is a fingerprint scanner. The biometric input device is provided with a peripheral slot 23 for accepting a peripheral card in the form of a smart card 25. The smart card is for performing functions related to a captured fingerprint. See col. 7, lines 3-11. A fingerprint provided to fingerprint imaging device 20 is partially processed within smart card 25 to increase security. See col. 7, lines 12-14.

The Office asserted that Dunn et al. includes a "control mechanism configured to control operation of the machine/system control device in accordance with user-specific information corresponding to the fingerprint (such as setting up user preferences) when there is a match with the registered fingerprint data (see Col. 7, lines 36-42)." However, Dunn et al. do not teach or

suggest "said user-specific data comprises personal characteristics of users, and said control mechanism is configured to utilize said personal characteristics of users rather than individually set conditions of use to control operation of the machine/system control device." Rather, although Dunn et al. indicates that other functions and smart card operations are "possible," the only ones taught appear to involve merely the identification of a user for verification purposes. See col. 7, lines 39-55.

By contrast, Applicant's Claim 9, as herein amended, recites "said user-specific data comprises personal characteristics of users, and said control mechanism is configured to utilize said personal characteristics of users rather than individually set conditions of use to control operation of the machine/system control device." This control mechanism advantageously avoids a requirement to separately set conditions of use in appropriate applications, as described at page 19, line 21 to page 20, line 6. Claim 10, as amended, recites a similar feature. For this reason, it is respectfully submitted that Claims 9 and 10, as herein amended, are patentable over Dunn et al., and that the section 102 rejection of Claims 9 and 10 as being anticipated by Dunn et al. should be withdrawn.

Claims 18 and 19 depend directly upon Claim 9. When the recitations of Claims 18 and 19 are considered in conjunction with those of Claim 9, it is submitted that Claims 18 and 19 are similarly patentable over Dunn et al.

For the above reasons, it is requested that the rejection of Claims 9, 10, 18 and 19 over Dunn et al. be withdrawn.

The rejection of Claims 6, 7, 20, and 22-24 as being unpatentable over Sehr in view of Itsumi et al. is respectfully traversed.

Sehr is directed to systems and methods for a plurality of passport-related applications using multi-applications passport devices for automatically compiling, issuing, and renewing a portable passport document, and for implementing of related passport services. The passport

devices are realized by portable device technologies such as smart cards and have the ability to store and process data content and communicate information with remote databases. Biometrics identification can be encoded onto the devices and verified at various locations upon presentation of the passport document for utilization. See Abstract.

Sehr teaches the use of a card 11 having database storage means, processing and communication capabilities, and display means. Sehr also teaches that a passenger can use a biometric box 13 of a card station 1 to capture and digitize his or her biometric information, such as a fingerprint, and use card reader 12 to write captured biometric information to card 11. Sehr also teaches the storage of passenger specific information, which the Office asserts is stored in a second memory unit. However, as correctly noted by the Office, Sehr's card lacks a thin fingerprint sensor and an exposed terminal configured for connecting with the external terminal of card 11.

Itsumi's IC card 63 shown in Figure 26 includes a fingerprint input unit 70 or thin fingerprint sensor, fingerprint data registration memory 74, information recording memory 75, and an external terminal 76. An information processing unit has an external terminal for exchanging information with IC card 63 via external terminal 76 of IC card 63, col. 15, lines 32-36. However, terminal 76 of IC card 63 is made operative only after a fingerprint match is determined by CPU 77 in IC card 63, so that the user can access the external terminal of a banking system or the like through external terminal 76, presumably using input keys 64 on card 63.

Neither Sehr nor Itsumi teach or suggest, either alone or in combination, "a portable information recording unit comprising a thin pressure-based fingerprint sensor configured to sense a pattern of ridges and valleys of a fingerprint as surface pressure distribution by scanning a plurality of scanning electrode lines arranged in an x-direction and a plurality of scanning electrode lines arranged in a y-direction with an active element connected to said x and y scanning electrode lines at each intersection thereof, a first memory unit configured to store

fingerprint data detected by the fingerprint sensor as registered fingerprint data, a second memory unit in which user-specific information is kept, and an exposed terminal." Neither Sehr nor Itsumi teach an external terminal connecting with an external terminal of card 11, and, at best, Itsumi teaches only that an external terminal is enabled to transmit data input from keys 64 when a fingerprint match is made in an IC card 64. Moreover, neither Sehr nor Itsumi teach or suggest, alone or in combination, a thin pressure-based fingerprint sensor configured to sense a pattern of ridges and valleys of a fingerprint as surface pressure distribution by scanning a plurality of scanning electrode lines arranged in an x-direction and a plurality of scanning electrode lines arranged in a y-direction with an active element connected to said x and y scanning electrode lines at each intersection thereof.

By contrast, Applicant's Claim 6 specifically recites "a portable information recording unit comprising a thin pressure-based fingerprint sensor configured to sense a pattern of ridges and valleys of a fingerprint as surface pressure distribution by scanning a plurality of scanning electrode lines arranged in an x-direction and a plurality of scanning electrode lines arranged in a y-direction with an active element connected to said x and y scanning electrode lines at each intersection thereof, a first memory unit configured to store fingerprint data detected by the fingerprint sensor as registered fingerprint data, a second memory unit in which user-specific information is kept, and an exposed terminal." No such external terminal is taught or suggested by either Sehr, Itsumi, or their combination, nor is such a configuration of thin pressure-based fingerprint sensor. Therefore, it is submitted that Claim 6, as herein amended, is patentable over Sehr in view of Itsumi.

Claim 7 depends directly upon Claim 6. When the recitations of Claim 7 are considered in combination with those of Claim 6, it is submitted that Claim 7 is also patentable over Sehr in view of Itsumi et al.

With respect to Claim 20, Sehr teaches a method in which an airline representative couples a passenger's card 11 to a control module, the control module reads identification data

from the card, requesting additional information to further verify the lawful bearer via a biometrics box, and the control module comparing the obtained additional information to the information read from card 11. As correctly noted by the Office, Sehr omits teaching registering fingerprint data of the airline representative, pressing a finger of the airline representative on a fingerprint sensor of the control module, and allowing access to the database of card 11 when the airline representative's fingerprint matches the registered fingerprint in database 10 of the control module. However, even assuming, *arguendo*, that a passenger's fingerprints are used to verify the passenger, and that biometric sensors are commonly used to protect against unauthorized access to databases, as asserted by the Office, it is still not taught or suggested in Sehr (and there is nothing in Itsumi et. al to remedy this deficiency) to make *both* comparisons in the same portable read/write device.

On the other hand, Applicant's Claim 20 recites "... conditioning access to the database on a match of the offered fingerprint to fingerprint data in the memory of the portable read/write/device, as determined by a fingerprint matching unit in the portable read/write device; ... [and] comparing, using the portable fingerprint matching unit in the portable read/write device, the obtained fingerprint of the second person to the fingerprint data read from the information recording/processing device. Using the recited method, is it not required to have a power source and other necessary components in a card, see page 12, lines 7-13. Also, the recited method makes it possible for the portable read/write device to capture a fingerprint of a person who is fraudulently using a card.

Moreover, Claim 20 more generally is directed to verification of "a first person" by using apparatus to identify of that person. In the first embodiment described by reference to Figs. 1A and 1B to 3, the first person is a police officer, and the subject mater of Claim 20 will be easily understood from the description on page 10 of the specification. As correctly understood by the Examiner, the airline representative of Sehr omits teach the steps of registering fingerprint data of the airline representative, pressing a finger of the airline representative on a fingerprint sensor

of the control module, and allowing access to card 11's database when the airline representative's fingerprint matches the registered fingerprint in database 10 of the control module. However, the Office asserts that "the use of biometric sensors to prevent unauthorized access to the database and the method of registering authorized user's fingerprints and allowing verified users to access the database are well known. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the above-mentioned steps to Sehr's method since the Examiner takes Official notice that such modifications are well known and will prevent unauthorized users from accessing sensitive data, thus improving security of the system."

Applicant does not believe this statement is supportable with respect to the obviousness of conditioning of access to a database that is used for comparison of fingerprint data for a second person upon a match of fingerprint data for a first person, as recited in Claim 20. Applicant therefore requests that the Examiner either support the Office's assertion with a specific reference that Applicant can explain or contradict, or that an affidavit of the Examiner or other employee of the Office be provided that can be subjected to contradiction or explanation by affidavits of the Applicant or other persons, as required by 37 C.F.R. 1.104(d)(2).

Claim 22-24 depend directly or indirectly upon Claim 20. When the recitations of Claims 22-24 are considered in combination with those of Claim 20, it is submitted that Claims 22-24 are also patentable over Sehr in view of Itsumi et al.

For the above reasons, it is requested that the rejection of Claims 6, 7, 20, and 22-24 as being unpatentable over Sehr in view of Itsumi et al. be withdrawn.

The rejection of Claim 25 as being unpatentable over Scott et al. in view of Borza et al. is respectfully traversed.

The Office asserted that Scott et al. teaches "transmitting minutiae data of the fingerprint to a receiver mounted in the vehicle, comparing the minutiae data of the fingerprint to data stored in a database of registered drivers, and conditioning the vehicle to unlock the door upon a match

of the minutiae data to data stored in the database of registered drivers (see col. 2, lines 16-39)." However, the cited passage in Scott et al. merely teaches the transmission of a fingerprint image rather than fingerprint minutiae data. The latter can best be understood as being data concerning a pattern comprising ridges and valleys, as described at page 8, line 19 to page 9, line 12 of Applicant's specification. In association with this, the technical terminology "the minutiae data of the fingerprint" is used in the specification (on page 15, lines 9, 17-19, and 19-20, for example). See also Exhibit A, selected pages from "The Science of Fingerprints, Classification and Uses," United States Department of Justice, Federal Bureau of Investigation, Washington, D.C. Fingerprint minutiae data thus are characterized, for example, by branch points and end points as shown in Figures 1 and 2 of Exhibit A. This data is to be distinguished from the fingerprint image taught in Scott et al.

Borza et al. adds nothing with respect to minutiae data of fingerprints, as Borza et al. makes no mention of such minutiae data.

By contrast, Applicant's Claim 25 recites "transmitting minutiae data of the fingerprint to a receiver mounted in the vehicle; comparing the minutiae data to data stored in a database of registered drivers; [and] conditioning opening of a door of the vehicle upon a match of the minutiae data to data stored in the database of registered drivers." Therefore, it is respectfully submitted that Claim 25 is patentable over the combination of Scott et al. in view of Borza et al.

Moreover, Claim 25 further recites "limiting a speed of the vehicle in accordance with data of driver-specific information, which can be updated and stored in the database for a matched registered driver, wherein said limiting is in accordance with personal characteristics of users rather than individually set conditions of use." It is submitted that neither Scott et al. nor Borza et al. teach or suggest such a limitation based on personal characteristics of a user rather than on individually set conditions of use. Therefore, for this additional reason, it is respectfully submitted that Claim 25 is patentable over the combination of Scott et al. in view of Borza et al.

App. No. 09/424,685
Amd. Dated 11/12/03
Reply to Office Action Dated July 11, 2003

16966-00002
PATENT

and it is requested that the rejection of Claim 25 as being obvious over Scott et al. in view of Borza et al. be withdrawn.

In view of the foregoing amendments and remarks, all of the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

Nov. 12, 2003



Alan L. Cassel
Registration No. 35,842
ARMSTRONG TEASDALE LLP
One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
(314) 621-5070